REMARKS

Claim Amendments

The limitations of Claim 2 are now incorporated into Claim 1. Claim 1, as amended, recites the use of a combination of ingredients.

The remaining amendments are matters of form to conform to standard practice. New claims 20 and 21 are added to recite the particular ingredients of claims 14 and17. No new matter is added. Entry of the foregoing amendments is respectfully requested.

Rejections under 35 U.S.C. 112

Claims 1-17 and 19 are rejected under 35 US 112, second paragraph as allegedly being indefinite. Applicants respectfully traverse. The various issues raised in the Office Action are addressed individually below.

1) Rejections relating to the recitation "which are made according to the single-stage process."

The Office Action alleges that it is unclear to which "single stage process" claim 1 refers, alleging that the application refers to "a few different 'single stage' processes." This is incorrect. The single stage process for silane crosslinked polyolefin production is well known. As stated in paragraph [0006] of the specification (as published), the process is described in British Patent No. 1,526,398 and involves a process in which "all additives are simultaneously dosed with the polymer in a specially designed extruder for producing online the desired extruded material." The remaining sections cited by the Examiner, i.e. paragraphs [0007] and [0030], are simply more detailed descriptions of specific applications that use the single stage process. Accordingly, withdrawal of the rejection is respectfully requested.

Applicants note that because the limitation of claim 2 have been incorporated into claim 1, the rejection for failing to specify compounds is rendered moot.

2) Rejections relating to "the polyolefin composition."

The claims have been amended to obviate this rejection.

3) Rejections relating to "high melting point, high-molecular phenolic constituent."

This phrase has been removed from the claims rendering the rejection moot.

4) Position of "(B1)" and "$RSiX_3$(B1);" components of constituent (B).

The claims have been amended to obviate these rejections by reformatting the claim. Accordingly the rejections are moot and should be withdrawn.

5) Use of "particularly" in claims 5, 14 and 17.

The claims have been amended to obviate this rejection. Accordingly the rejections are moot and should be withdrawn.

6) Rejections relating to "the organic alkylperoxide" in claim 8.

Claim 8 has been amended to depend from claim 7 rending the rejection moot.

Rejections under 35 U.S.C. 102

The Office Action rejects Claims 1, 17 and 19 under 35 U.S.C. 102(b) as allegedly being anticipated by Stachowiak (US 6,361,842). Applicants respectfully traverse. However, to expedite prosecution, the limitations of Claim 2, which the Office Action acknowledges was not anticipated, are now incorporated into Claim 1. Accordingly, the rejection is moot and should be withdrawn.

Rejections under 35 U.S.C. 103

The Office Action rejects Claims 2-16 under 35 U.S.C. 103(a) as allegedly being unpatentable over Stachowiak in view of Yui et al. (US 4,244,910), as evidenced by Paul et al. (US 6,894,101). Applicants respectfully traverse.

First, persons skilled in the art would have no reason to combine the disclosure of Stachowiak with that of either Yui or Paul. While Stachowiak relates to a silane crosslinked polyethylene, neither Yui nor Paul is related to a silane crosslinked polymer. Yui does not mention silanes or crosslinking at all. Paul describes "crosslinkable" compositions, but does not mention silanes as crosslinking agents, stating only that "a crosslinking agent, e.g., triallyl cyanurate, may be added to the plastic mixture. The crosslinking agent acts as an activator for the crosslinking process, which occurs either by

means of high-energy radiation or by means of additional peroxide crosslinking agents, e.g., dicumyl peroxide." (Col. 3, lines 57-61). Because neither Yui or Paul contemplates silane crosslinkinked polyolefins, one skilled in the art would have no reason to combine the additives of either Yui or Paul with the silane crosslinked composition of Stachowiak and a *prima facie* case for obviousness has not been established. For this reason alone, the rejection under 35 U.S.C. 103(a) should be withdrawn.

Second, the references, whether considered alone or in combination, fail to disclose the use of phenolic antioxidants, sulfur-type antioxidants, phosphorus-type antioxidants and metal deactivators in combination as now required by all of the claims. Contrary to what is stated in the Office Action, Yui does not teach that a polyolefin mixture may include a mixture of phenolic antioxidants, sulfur-type antioxidants, phosphorus-type antioxidants and metal deactivators. Rather, Yui simply teaches that these, among other ingredients such as fatty acid and esters, amides, and metal salts thereof, rubbers, neutralizing agents, antifoamers, fire retardants, etc. may be used alone or as a mixture. There is no suggestion of or reason for using any particular combination such as the combination now recited by the claims or of any additional benefit from using them.

The Office Action further acknowledges that Paul teaches the use of secondary antioxidant such as a sulfur **or** phosphorous reagent; there is no suggestion of using both a sulfur **and** phosphorous reagent as required by the present claims. The sulfur and phosphorous antioxidants are optional ingredients, as evidenced by an amount of secondary antioxidant of 0- 12.0 parts (Paul, column 4, lines10); thus, not only is the combination of sulfur **and** phosphorous reagents not required, but Paul suggests that neither is necessarily present and implies that they have little or no added effect on the properties of the composition. Paul further requires additional stabilizer, in particular an aminic light stabilizer and, optionally calcium stearate and/or an aromatic polycarbodiimide.

Accordingly, at best the Office Action arrives at the present invention by starting with the silane grafted polymer of Stachowiak, selecting a pair of references unrelated to silane grafted or crosslinked polymers and then picking and choosing among the additives listed by Yui, and omitting additives required by Paul. All of this without any

guidance whatsoever by Yui or Paul to select the combination of phenolic antioxidants, sulfur-type antioxidants, phosphorus-type antioxidants and metal deactivators recited in the present claims, and without any suggestion of using a particular combination to enhance chlorine resistance. Without some guidance to make the selection recited in claim 1, a *prima facie* case of obviousness cannot be established and the rejection should be withdrawn.

Third, the combination of ingredients recited in the claims provides an unexpected result as shown by the present specification. In particular, use of a composition according to the invention provides chlorine resistance in the finished article. As demonstrated in the examples, articles prepared with all of the components of constituent (C) (Example compositions 1-6) have a significantly longer service life upon exposure to chlorine water than an article prepared with less than all of the components of constituent (C) (comparative example) under almost all conditions tested. None of the references teach, disclose or suggest this unexpected advantage, particularly in either a silane crosslinked polyolefin nor a silane crosslinked polyolefin produced by a single stage process. Because these unexpected results can not be predicted based on the references of record, the rejection should be withdrawn.

For each of the reasons set forth above, the present invention is patentable and the rejection of the claims under 35 U.S.C. 103(a) over Stachowiak in view of Yui as evidenced by Paul should be withdrawn.

Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. Applicant believes that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is hereby invited to telephone the undersigned at the number provided.

The Commissioner is authorized to charge any deficiency in any patent application processing fees pursuant to 37 CFR § 1.17, including extension of time fees pursuant to 37 CFR § 1.17(a)-(d), associated with this communication and to credit any excess payment to Deposit Account No. 22-0261.

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Respectfully submitted,

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